

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number  
**WO 2005/076057 A1**

(51) International Patent Classification<sup>7</sup>: **G02F 1/1335**

(21) International Application Number:  
**PCT/AU2005/000145**

(22) International Filing Date: 4 February 2005 (04.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004900553 5 February 2004 (05.02.2004) AU

(71) Applicant (for all designated States except US): **SECURENCY PTY LIMITED** [AU/AU]; Hume Highway, Craigieburn, VIC 3084 (AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **POWER, Gary, Fairless** [GB/AU]; 46 Drummond Street, Greenvale,

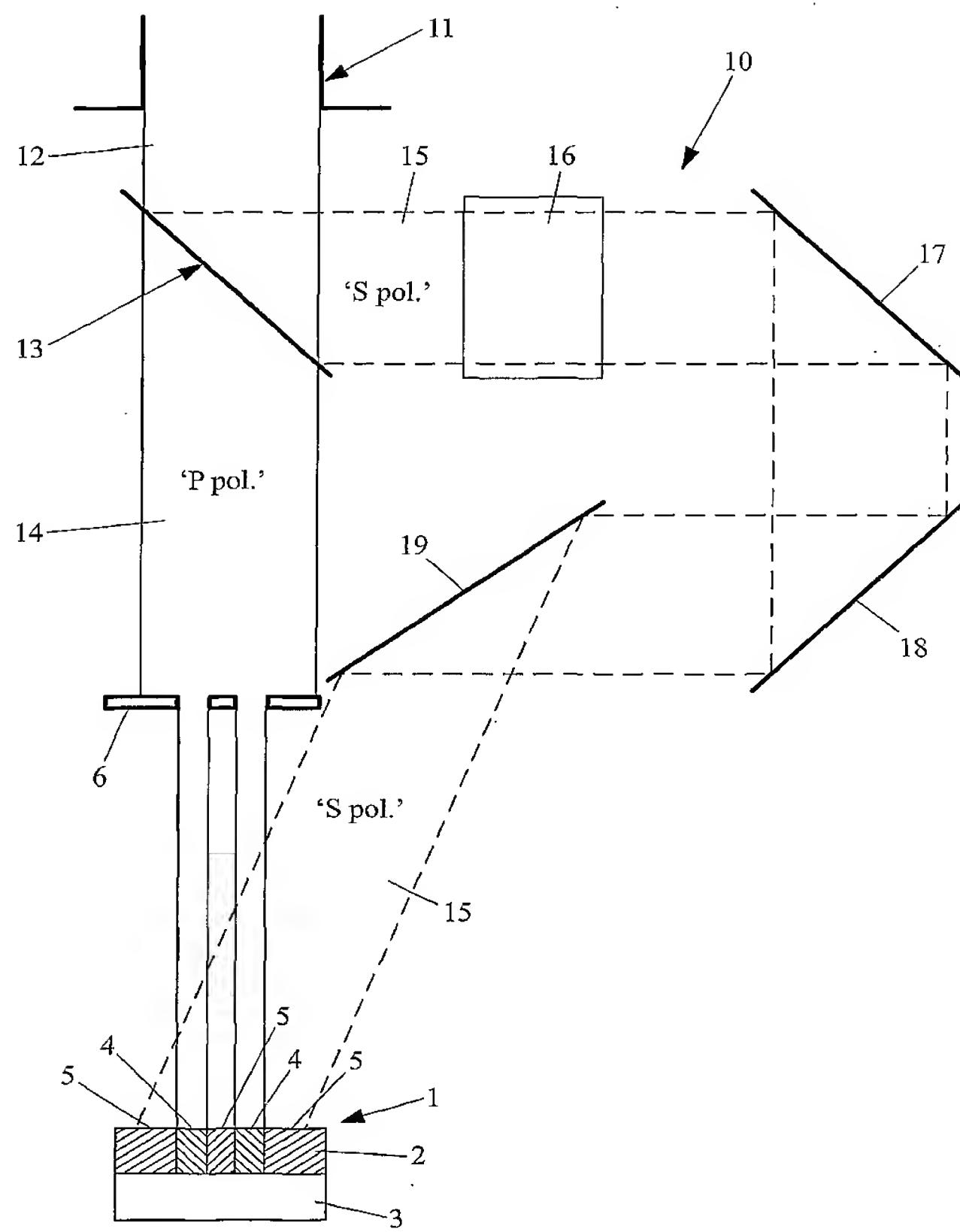
VIC 3059 (AU). **HENSON, Paul** [AU/AU]; 26 Dewdale Place, Craigieburn VIC 3064 (AU). **GRACE, John** [AU/AU]; 16 Ross Street, Newport Beach, NSW 2016 (AU). **ANDREW, Roderick** [BE/FR]; 1, Chemin de la Noire Femme, F-59570 Taisnieres s/Hon (FR).

(74) Agent: **WATERMARK PATENT & TRADEMARK ATTORNEYS**; 290 Burwood Road, Hawthorn, VIC 3122 (AU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

*[Continued on next page]*

(54) Title: METHOD AND APPARATUS FOR MANUFACTURING AN OPTICAL COMPONENT



(57) Abstract: A method and apparatus (10) for manufacturing an optical component (1) having at least one photo-oriented polymeric layer is provided. The apparatus includes a single source of laser radiation (11), beam splitting means (13) for splitting the laser radiation into a first beam (14) of linearly polarised light having a first plane of polarisation (P polarisation) and a second beam (15) of linearly polarised light having a second plane of polarisation (S polarisation), first directing means for directing the first beam of linearly polarised light onto a first area or areas of at least one photo-orientable polymeric layer to cause a first molecular orientation in said first area or areas of the layer and second directing means for directing the second beam of linearly polarised light onto said photo-orientable polymeric layer to cause a second molecular orientation in a second area or areas of the layer. The apparatus includes delay means (17, 18, 19) for the second beam (15) of linearly polarised light so that the second beam arrives at the photo-orientable polymeric layer a predetermined delay time after the first beam of linearly polarised light.

WO 2005/076057 A1



**(84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

- *with international search report*